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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,801

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Graham R Eastham

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EXAMINER

OH, TAYLOR V

ART UNIT

PAPER NUMBER

1625

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DELIVERY MODE

03/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,801	Applicant(s) EASTHAM ET AL.	
	Examiner Taylor Victor Oh	Art Unit 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-8,10-23 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 2,3,5-8,10-23 and 27-31 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

In view of reviewing applicants' response, the examiner has withdrawn the previous Office action and decided to restrict the application again.

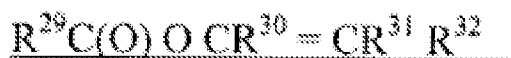
The Lack of Unity

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 2-3,5-8,10-23,27-31, is drawn to the process for the carbonylation of vinyl acetate compound of formula (IV) as disclosed below :



R²⁹ may be selected from hydrogen, lower alkyl, aryl,

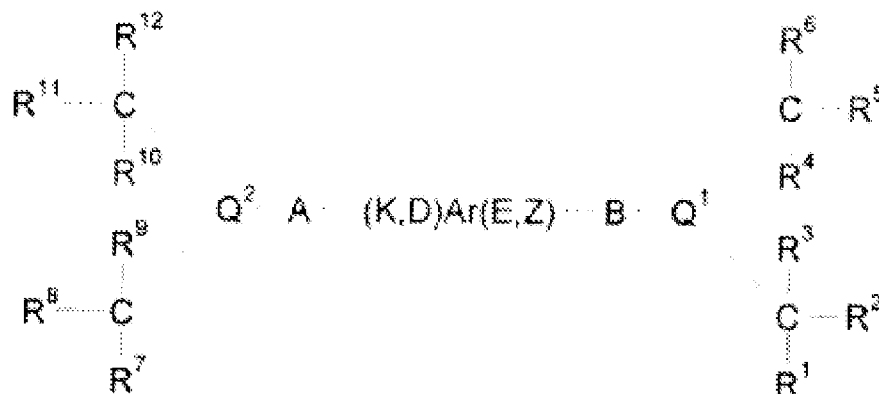
halo, cyano, nitro, OR¹⁹,

OC(O)R²⁰, C(O)R²¹, C(O)OR²², NR²³R²⁴, C(O)NR²⁵R²⁶, C(S)NR²⁵R²⁶, SR²⁷, and

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wherein R^{12} – R^{18} and R^{19} – R^{27} are as defined below and R^{30} – R^{32} independently represent hydrogen, lower alkyl, aryl, in the presence of a catalyst

containing a metal of group VIIIB and arsine or stibine of formula (I):



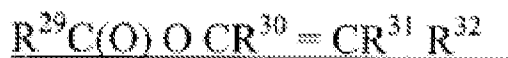
R^1 to R^{18} each independently represent lower alkyl, aryl,

R^{19} to R^{27} each independently represent hydrogen, lower alkyl, aryl,

Group II, claims 2-3,5-8,10-23,27-31, is drawn to the process for the

carbonylation of vinyl acetate compound of formula (IV) as disclosed

below :

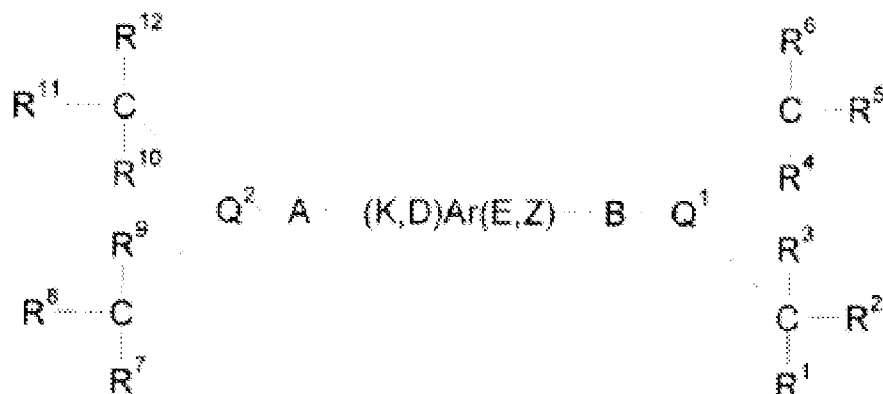


R^{29} may be selected from Het;

wherein R^{12} – R^{18} and R^{19} – R^{27} are as defined below and R^{30} – R^{32} independently represent

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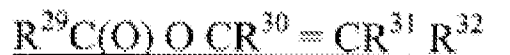
Het; in the presence of a catalyst containing a metal of group VIIIB and arsine or stibine of formula (I):



R^1 to R^{18} each independently represent Het;

R^{19} to R^{27} each independently represent Het;

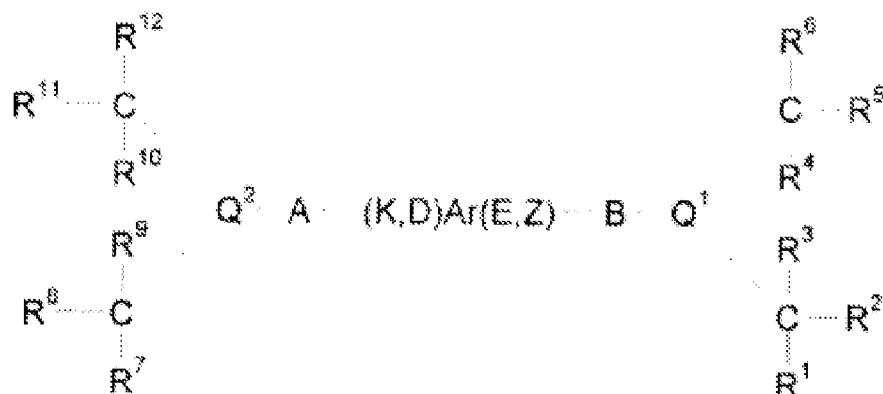
Group III, claims 2-3,5-8,10-23,27-31, is drawn to the process for the carbonylation of vinyl acetate compound of formula (IV) as disclosed below :



R^{29} is Het **and** R^1 to R^{18} are each independently alkyl or aryl **and** R^{19} to R^{29} are each independently hydrogen, lower alkyl or aryl;

in the presence of a catalyst containing a metal of group VIIIB and arsine or stibine of formula (I):

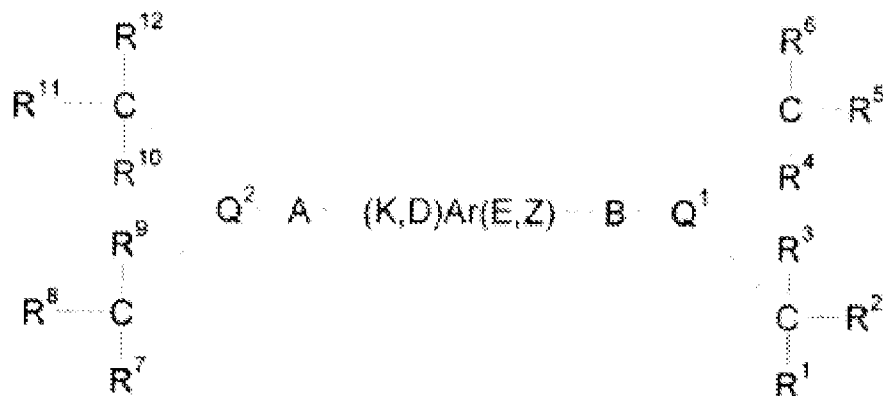
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Group IV, claims 2-3,5-8,10-23,27-31, is drawn to the process for the
 carbonylation of vinyl acetate compound of formula (IV) as disclosed
 below :

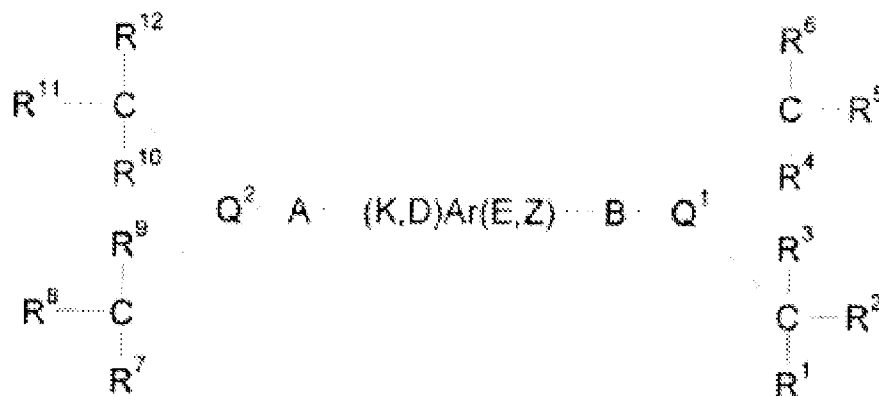
R^{29} is selected from hydrogen, lower alkyl, aryl, halo, cyano, nitro, OR^{19} , $OC(O)R^{20}$, $C(O)R^{21}$, $C(O)OR^{22}$, $NR^{23}R^{24}$, $C(O)NR^{25}R^{26}$, $C(S)NR^{25}R^{26}$, SR^{27} , and $C(O)SR^{29}$ and R^1 to R^{18} are each Het and R^{19} to R^{29} are each Het; or

in the presence of a catalyst containing a metal of group VIIIB and arsine or
 stibine of formula (I):



Group V, claims 2-3,5-8,10-23,27-31, is drawn to the process for the
 carbonylation of vinyl acetate compound of formula (IV) as disclosed
 below :

in the presence of a catalyst containing a metal of group VIIIB and arsine or
 stibine of formula (I):



R^{29} is selected from hydrogen, lower alkyl, aryl, halo, cyano, nitro, OR^{19} , $OC(O)R^{20}$, $C(O)R^{21}$, $C(O)OR^{22}$, $NR^{23}R^{24}$, $C(O)NR^{25}R^{26}$, $C(S)NR^{25}R^{26}$, SR^{27} , and $C(O)SR^{29}$ **and** where at least one, but not all of R^1 to R^{18} are Het **and** where at least one, but not all of R^{19} to R^{29} are Het.

I. The inventions listed as Groups I -V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

the international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept (“ requirement of unity of invention ”).

PCT Rule 13.2 states “ Where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression “ special technical features” shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

In the instant case, the invention of Group II is directed to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of heterocyclic or heteroaryl groups in the presence of the catalyst composition with a HET , whereas the invention I is related to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of non-heterocyclic or heteroaryl groups in the presence of the catalyst composition without any HET .

The process of making vinyl acetate compound of formula (IV) having heteroaryl or heterocyclic group in Group II has a particular chemical structure and atoms in the ring along with the catalyst composition containing a HET, which is different from that of making vinyl acetate compound of formula (IV) having non-heteroaryl or non- heterocyclic group with the catalyst composition without any HET in Group I since each will exhibit a chemically different activity respectively due to the differences in the core chemical substituents such as the presence of a HET of the

vinyl acetate and in the reaction conditions such as the presence of the catalyst containing the HET, temperature, pressure, and etc.. Each invention has a different use and effect due to the unrelated substituent attached to the core of the compounds.

In the instant case, the invention of Group III is directed to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of heterocyclic or heteroaryl groups in the presence of the catalyst composition with a HET, whereas the invention I is related to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of non-heterocyclic or heteroaryl groups in the presence of the catalyst composition without any HET.

The process of making vinyl acetate compound of formula (IV) having heteroaryl or heterocyclic group in Group III has a particular chemical structure and atoms in the ring along with the catalyst composition containing a HET, which is different from that of making vinyl acetate compound of formula (IV) having non-heteroaryl or non-heterocyclic group with the catalyst composition without any HET in Group I since each will exhibit a chemically different activity respectively due to the differences in the core chemical substituents such as the presence of a HET of the vinyl acetate and in the reaction conditions such as the presence of the catalyst containing the HET, temperature, pressure, and etc.. Each invention has a different use and effect due to the unrelated substituent attached to the core of the compounds.

In the instant case, the invention of Group IV is directed to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of heterocyclic or heteroaryl groups in the presence of the catalyst

composition with a HET , whereas the invention I is related to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of non-heterocyclic or heteroaryl groups in the presence of the catalyst composition without any HET .

The process of making vinyl acetate compound of formula (IV) having heteroaryl or heterocyclic group in Group IV has a particular chemical structure and atoms in the ring along with the catalyst composition containing a HET, which is different from that of making vinyl acetate compound of formula (IV) having non-heteroaryl or non-heterocyclic group with the catalyst composition without any HET in Group I since each will exhibit a chemically different activity respectively due to the differences in the core chemical substituents such as the presence of a HET of the vinyl acetate and in the reaction conditions such as the presence of the catalyst containing the HET, temperature, pressure , and etc.. Each invention has a different use and effect due to the unrelated substituent attached to the core of the compounds.

In the instant case, the invention of Group V is directed to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of heterocyclic or heteroaryl groups in the presence of the catalyst composition with a HET , whereas the invention I is related to the process for the carbonylation of vinyl acetate compound of formula (IV) with the side chain of non-heterocyclic or heteroaryl groups in the presence of the catalyst composition without any HET .

The process of making vinyl acetate compound of formula (IV) having heteroaryl or heterocyclic group in Group V has a particular chemical structure and atoms in the ring along with the catalyst composition containing a HET, which is

different from that of making vinyl acetate compound of formula (IV) having non-heteroaryl or non-heterocyclic group with the catalyst composition without any HET in Group I since each will exhibit a chemically different activity respectively due to the differences in the core chemical substituents such as the presence of a HET of the vinyl acetate and in the reaction conditions such as the presence of the catalyst containing the HET, temperature, pressure, and etc.. Each invention has a different use and effect due to the unrelated substituent attached to the core of the compounds.

Therefore, there is no special technical feature required among Group I, Group II, Group III, Group IV, and Group V. There is no single general inventive concept and no unity of invention for the method or the processes as defined in 37 CFR 1.475.

37 CFR 1.475 states that a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combination of categories:

- a. A product and a process specially adapted for the manufacture of said product;
or
- b. A product and a process of use of said product; or
- c. A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or
- d. A process and an apparatus or means specially designed for carrying out the said process; or

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- e. A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specially designed for carrying out the said process.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

II. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taylor Victor Oh, MSD,LAC,CH
Primary Examiner
Art Unit 1625

/Taylor Victor Oh/
Primary Examiner, Art Unit 1625
3/15/09